



human CAP-1

60
MLSHNTMMKQKQQATAIMKEVHGNDVDGMDLGKKVSIIPRDIMLEELSHLSNRGARLFKM
120
RQRSDKYTFENFQYQSRAQINHSIAMQNGKVDGSGNLEGGSQQAPLTPPNTDPDRSPNP
180
DNIAPGYSGPLKEIIPPEKFNNTTAVPKYYQSPWEQAISNDPELLEALYPKLFKPEGKAELE
240
DYRSFNRVATPFGGFEKASKMVKFKVPDFELLLLTDPREFMSFVNPLSGRRSFNRTPKGI
SENIPVITTEPTDDTTVPESDL

FIG. 1A

mouse CAP-1

60
MLSHSAMVKQKQQASAITKEIHGHVDVDGMDLGKKVSIIPRDIMIEELSHFSNRGARLFKM
120
RQRSDKYTFENFQYQSRAQINHNIAQNGRVDGSGNLEGGSQQGPSTPNTDPDRSPNP
180
ENIAPGYSGPLKEIIPPERFNTTAVPKYYRSPWEQAIGSDPELLEALYPKLFKPEGKAELE
240
DYRSFNRVATPFGGFEKASKMVKFKVPDFELLLLTDPREFLAFANPLSGRRCFNRAPKGW
SENIPVITTEPTEDATVPESDDL

FIG. 1B

human CAP-2

60
 MPLSGTPAPNKKRKSSKLIMELTGGGQESSGLNLGKKISVPRDVMLEELSLLTNRGSKMF
 120
 KLRQMRVEKFIYENHPDVFSDSMDHFQKFLPTVGGQLGTAGQGFYSKSNRGGSQAGG
 180
 SGSAGQYGSDDQOHHLGSGSGAGGTGGPAGQAGRGGAAGTAGVGETSGDQAGGEGKHITV
 240
 FKTYISPWERAMGVDPQQKMELGIDLLAYGAKAELPKYKSFNRTAMPYGGYEKASKRMTF
 QMPKFDLGPLLSEPLVLYNQNLNRPSPFNRTPIPWLSGGEVDYNVDIGIPLDGETEEL

FIG. 1C

mouse CAP-2

60
 MPLSGTPAPNKKRKSSKLIMELTGGGRESSGLNLGKKISVPRDVMLEELSLLTNRGSKMF
 120
 KLRQMRVEKFIYENHPDVFSDSMDHFQKFLPTVGGQLETAGQGFYSYKSGSSGGQAGSSG
 180
 SAGQYGSDDRHHQQSGGFGAGSGGGPGGQAGGGGAPGTGVLGEPGSGDQAGGDGKHVTVFKT
 240
 YISPWDRAMGVDPQQKVELGIDLLAYGAKAELPKYKSFNRTAMPYGGYEKASKRMTFQMP
 KFDLGPLLSEPLVLYNQNLNRPSPFNRTPIPWLSGGEHVDYNVDVGIPLDGETEEL

FIG. 1D

mCAP-1 M L S H S M V Q Q A S A I T K E I H H D V D M D L N V I
 mCAP-2 M P L S G T P P N R S S K L I M E L T G C R E S S L N V I

mCAP-1 I I E E H S M A R L M M R K S D K Y I F E F - - -
 mCAP-2 I I E E H S M A R L M M R K S D K Y I F E F - - -

mCAP-1 - - - - - Y S R A I N H N I A M Q N R V D G A N L
 mCAP-2 D S S M D H F Q K E L P T V G G L T A G G F S Y K G S S G Q A G S S G

mCAP-1 E G S - - - - P S T P N T P D P R S P P N P E N I A P E Y S P L
 mCAP-2 S A Q Y G S D R H P S T P N T P D P R S P P N P E N I A P E Y S P L

mCAP-1 K E I P P E R F N T - - - T A P Y R S T E Q I I S E L L E A Y
 mCAP-2 E P G S G D Q A G G D G K H V T F T I S T D R M H V Q Q K V E G

mCAP-1 P K F K P E G R D R P Y T F T M F E N A M V K K V
 mCAP-2 I D L A Y G A P K M F T Y Y F T M F E N A M V K K V

mCAP-1 D E L L T D P R F L A F A N P T G R C T A A K C V E N I P V
 mCAP-2 K D G P L S E P L V L Y N Q N P S T A A K C V E N I P V

mCAP-1 I T T E P T E D A T V P E S D D
 mCAP-2 Y N V D - V G I P L D C T E E

FIG. 1E

Figure 1. The effect of the concentration of the Fe^{2+} solution on the adsorption of Fe^{3+} by the Fe^{2+} -impregnated activated carbon. The concentration of the Fe^{3+} solution was 100 mg/L. The concentration of the Fe^{2+} solution was 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, and 100 mg/L. The adsorption was carried out at 25°C for 24 h.

FIG. 2A

mouse CAP-1

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10      20      30      40      50      60      70      80      90      100
ATTCCGGCATGGGATCGAGGACCATGCCGTTCCAGGTTCAAGGATAAAACCCATTGGGCGATAGTGGCGTCATATTCCACCTTCAGTGCCTTCCTCCA
TAAGCCGCTGACCTAGCTCCTCGGTACGGCAAGGTCGAAGTTCCTATTTCGGTAACCCGGTATCACGGCAGTATAGGTGGAAAGTCACGGGAAGCGGT

110     120     130     140     150     160     170     180     190     200
CAATTGGGATTCACCCCTGCTGAAAAGCGCACGCTGACAGCAAGGGAACAAAAAATATGCTATCAGATAGTGCATGGTGAAGCAAAAGAAACAGCAAG
GTTAAACCTTAAGTGGGACGACTTTTCGGCTGGCACTGTCGTTCCCTGTTTTTTGATACGATAGTGATACAGGGTACCACCTTCGTTCTTCTGCTGTC

210     220     230     240     250     260     270     280     290     300
CATCAGCCATCAGCAAGGAATCCATGGACATGATGTTGACGGCATGGACCTGGGCAAAAAGTTAGCATCCCGAGAGACATCATGATGAAGAATTGTC
GTAGTCGATGCTCTCTTAGTACCTGACTACAACTGCCGTAACCTGGACCCCTTTTTCATTCGTAGGGGCTCTGTAGTACTATCTCTTAAACAG

310     320     330     340     350     360     370     380     390     400
CCATTTGAGTAATCGTGGGCGAGGCTGTTAAGATGCTCAAGAAAGATCTGACAAATACACCTTTCAAAATTTCCACTATGAATCAGACCAAAATF
GGTAAAGTCAATAGCACCCCGGTCGCAAAATTCACGAGTTTCTCTAGACTGTTTATGTGGAACCTTTTAAAGGTCAATCTAGATCTCTGCTTTAA

410     420     430     440     450     460     470     480     490     500
AATCACAATATCGCATCGCAAAATGGGAGAGCTTGATCGAAGCAACCTGGAGCTGGCTCAGAGCAAGGCCCTCAACTTCGGCCCAACACCCCGATCCAC
TTAGTCTTATAGCGGTACCTCTTACCCTCTCAACTACTCTTCGTGGACCTTCCACCGAGTGTGTTCCGGGAGTTGAGCGGGTTGTGGGGGCTAGGTG

510     520     530     540     550     560     570     580     590     600
GAAGCCCGCCAAATCAGAGAACATCGCACCAAGGATATTCCTGGACCACTGAAGGAAATTCCTCTGAAAGGTTTAAACGACGACGCCGTTCTTAAGTACTA
CTTCGGGGGGTTTAGGTCTCTTAGGCTGGTCTATAGACCTGGTGACTTCTTTAAGGAGGACTTTCGAAATGTGCTCGCCGCAAGGATTCATGAT

610     620     630     640     650     660     670     680     690     700
CCGGTCTCCATCGGAGAGCGGATGGCGAGCATCCGAGCTCCTGGAGGCTTTGTACCCAAAATTTTCAAGCTGAAGGAAAAGCAGAACTCGGGGAT
GCCCAGAGGTACCTCTGCTCGCTACGCTGCTTAGGCTCGAGGACCTCCGAAACATGGGTTTTGAAAAGTTCCGACTTCTCTTTCTGTCTTGACGCCCTA

710     720     730     740     750     760     770     780     790     800
TACAGGAGTATTAACGAGTTGGCACTCCATTTCGGAGGTTTTGAAAAGCATCAAAAATGTCAAAATTTCAAGTTTCCAGATTTTGAACCTACTGCTGCTGA
ATGCTCTCGAATTTGTCGCAACGGTAGGTAACCTCCAAAATTTTTCGTAGTTTTTACAGTTTAAAGTTTCAAGGCTTAAACTTGATGACGAGGACT

810     820     830     840     850     860     870     880     890     900
CAGATCCAGGTTCTTGGCTTTGCCATCTCTTTGGGCGAGCACTGCTTAAACAGGGCGCCAAAGGGGTGGGTAATCGAGAATATCCCGCTCGTAT
GTCTAGGGTCCAGAAACCGGAAACGGTTAGGAGAAAGCCGCTCTGCTAGGAAATTTCCCGGGGTTCCCCACCCCATAGACTCTATAGGGGCGAGCACTA

910     920     930     940     950     960     970     980
CACAACTCAGCTTACAGAACACCCACTGTACCGAATCAGATGACCTGTGAGAGGGAAGCTGGGGATGCCACAGGAAGTTT
GTGTGACTCGAGTCTTCTCGGTCGACATGGGCTTAGTCTACTGGACACTCTCCCTTCACCCCTACGGTGTCTTCAAG

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FIG. 2B

human CAP-2

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100 CGGTACAGC AGCTAGTCC TCCAAAGCTG CTGGACCCCA GGGAGAGCTG ACCACTGCCC GAGCAGCTGG CTGAATCCAC CTCACAATG CCGCTCTCAG
200 GAACCCCGGC CCTAATAAG AAGAGGAAT CCAGCAAGCT GATCATGAA CTCACGGAG GTGGACAGGA GAGCTCAGGC TTGAACCTGG GCAAAAAGAT
300 CAGTCTCCA AGGGATGCA TGTGGAGGA ACTGTCGCTG CTTACCAACC GGGGCTCAA GATGTTCAA CTGGGGCAGA TGAGGGTGGG GAAGTTTATT
400 TATGAGAACC ACCCTGATGT TTTCTGTGAC AGCTCAATGG ATCACTTCCA GAAGTTCTT CCAACAGTGG GGGGACAGCT GGGCAGAGCT GGTCAAGGAT
500 TCTATACAG CAAGAGCAAC GGCAGAGCG GCAGCCAGGC AGGGGGCAGT GGCTCTGCC GACAGTATGG CTCTGATCAG CAGCACCATC TGGGCTCTGG
600 GTCTGAGCT GGGGATCAG GTGCTCCGC GGGCCAGCT GGCAGAGGAG GAGCTGCTGG CACACAGGGG GTTGGTGAGA CAGCATCAGG AGACCAGCCA
700 GCGCGAAG GAAAACATAT CACTGTGTC AAGACCTATA TTTCCCATG GGAGCGAGCC ATGGGGGTTG ACCCCAGCA AAAAATGGAA CTTGGCAATTG
800 ACCTGCTGGC CTATGGGGCC AAAGCTGAAC TTCCCAAATA TAAGTCTTC AACAGGACGG CAATGCCCTA TGGTGATAT GAGAAGGCT CCAAAACCAT
900 GAGCTTCAG ATGCCAAGT TTGACCTGG GCGCTTGTG AGTGAACCC TGGTCTCTA CAACAAAAC CTCTCCACA GGCCTTCTT CAATCGAACC
1000 CCTATTCCCT GGTGAGCTC TGGGAGCCT GTAGACTACA ACGTGGATAT TGGCATCCC TTGCATGAG AAACAGAGGA GCTGTGAGT GTTCTCTCT
CTGATTGCA TCAATTTCCC TCTCTGCTC CAATTGGAG A

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FIG. 2C

mouse CAP-2

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100 GCGGGGAGA GCGGCCACC AACTGAGCAG CTGGTCAGAT CCACCTCCAC CATGCCACGC TCAGGAACCC CGGCCCCCTAA CAAGAGGAGG AAGTCAAGCA
110 AACTGATAT GGAGCTACT GGAGGTGGCC GGGAGAGCTC AGGCTGAAAC CTGGGCAAGA AGATCAGTGT CCCAAGGGAT GTGATGTTGG AGGAGCTGTC
120 CCTCTTACC AACCGAGGCT CCAGATGTT CAAGTACGG CAGATGCGGG TGGAGAAAT TATCTATGAG AATCACCOCG ATGTTTTCTC TGACAGCTCA
130 ATGGATCACT TCAGAGATT TCTTCCACA GTGGGAGGAC AGCTGGAGAC AGCTGGTCAG GGCTTCTCAT ATGGCAAGGG CAGCAGTGA GGCACGGCTG
140 GCAGCAGTGG CTCTGCTGA CAGTATGGCT CTGACCGTCA TCAGCAGGGC TCTGGGTTTG GAGCTGGGG TTCAGTGGT CCTGGGGGCC AGGCTGGTGG
150 AGGAGGAGCT CTTGGCAGAG TAGGGCTTGG AGAGCCCGGA TCAGGTGACC AGGCAGGTGG AGATGGAAAA CATGTCACGT TGTTCAGAG TTATATTTC
160 CCATGGGATC GGGCCATGGG GGTGATCCT CAGCAAAAG TGGAACTTGG CATTGACCTA CTGGCATAAG GTGCCAAGC TGAACCTCCC AATATAAGT
170 CCTTCACAG GACAGCAATG CCTACGGTG CATATGAGAA GGCCTCCAAA CGCATGACCT TCCAGATGCC CAAGTTGAC CTGGGGGCTC TGCTGAGTGA
180 ACCCTGGTC CTCTACAACC AGAACCTCTC CAACAGGCTT TCTTCAATC GAACCCCTAT TCCTGGTGG AGCTCTGGGG AGCATGTAGA CTACAACGCTG
190 GATGTTGGTA TCCCTTGA TGGAGAGACA GAGGAGCTGT GAAGTGCTTC CTCTGTGAT GTGCATCAT TCCCTTCTCT GGTTCGAAT TGAGAGTGA
200 TGCTGGACAG GATGCCCAAC CTGTTAATCC AGTATTCTTG TGGCAATGGA GGGTAAAGGG TGGGGTCCGT TGCTTTCCA CCTTCAAGT TCTGCTCCG
210 AAGCATCCCT CTTACCCAGC TCAGAGCTCC CATCTGCTG TACCATATGG AATCTGCTCT TTTATGGAAT TTCT

```

FIG. 2D

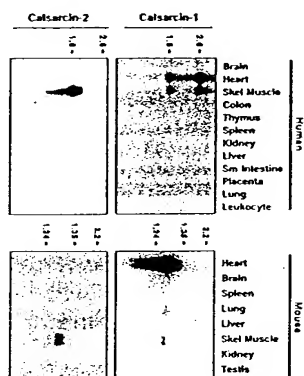


FIG. 3

FIG. 4C

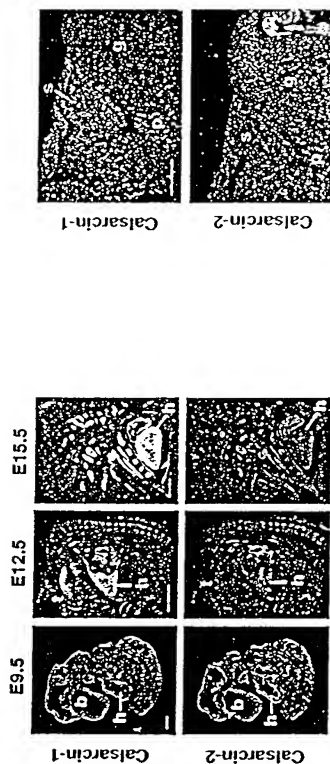


FIG. 4A

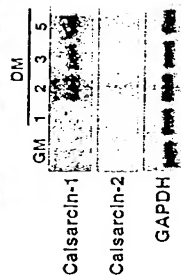


FIG. 4B

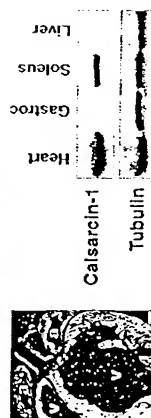


FIG. 4D

FIG. 4E

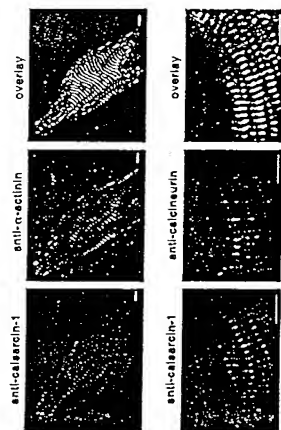


FIG. 5A

FIG. 5B



FIG. 6A

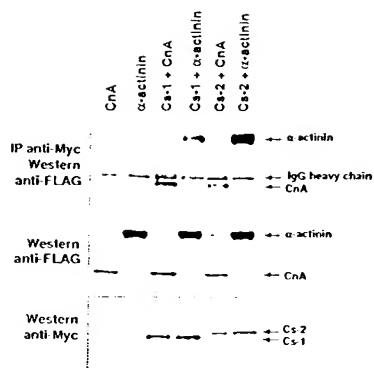


FIG. 6B

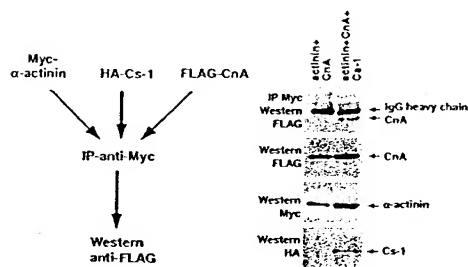
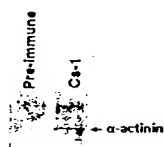
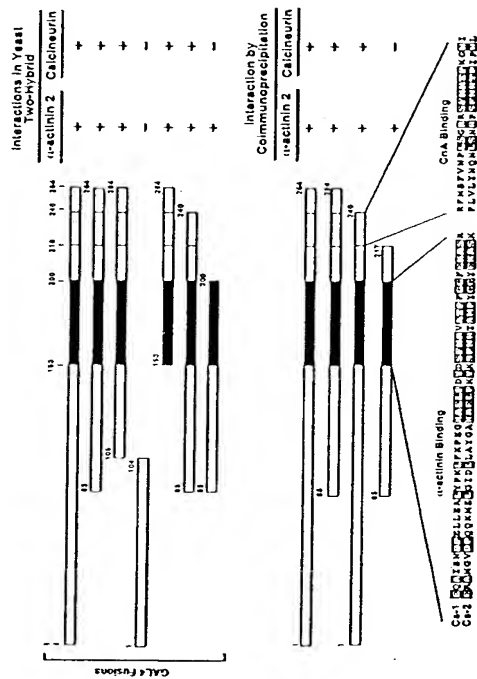


FIG. 6C





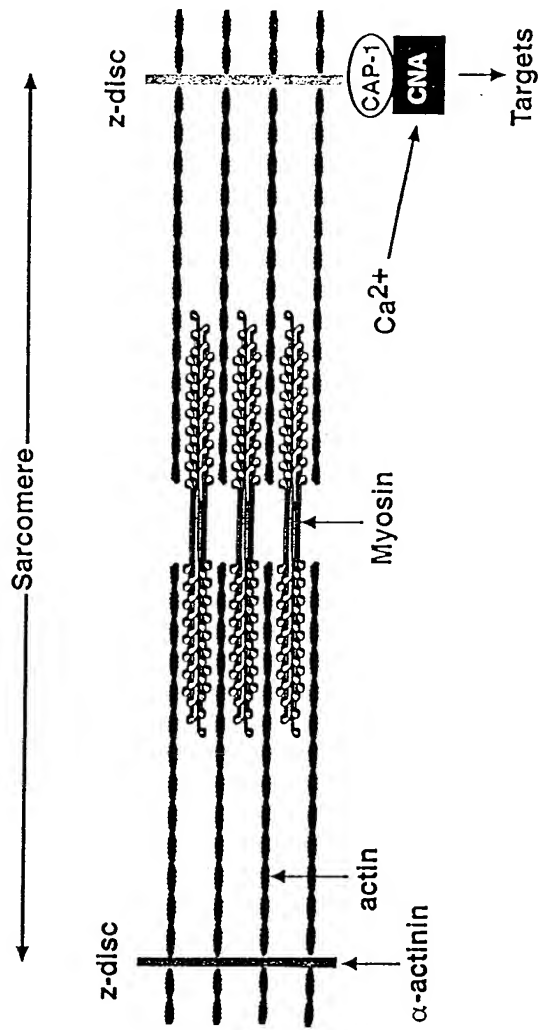


FIG. 8

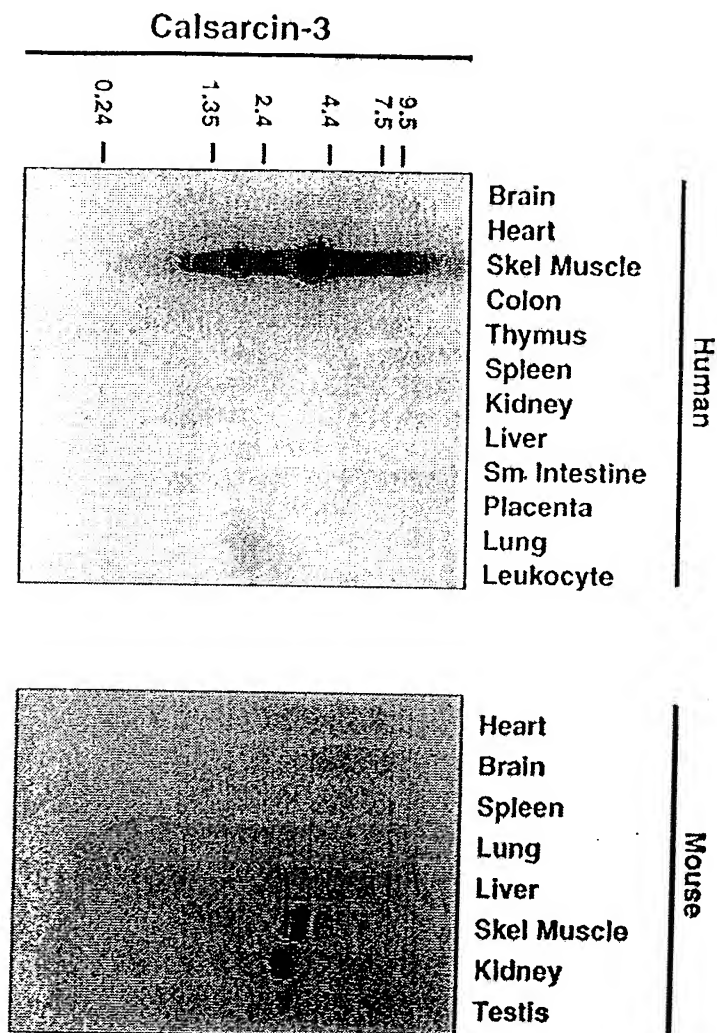


FIG. 9

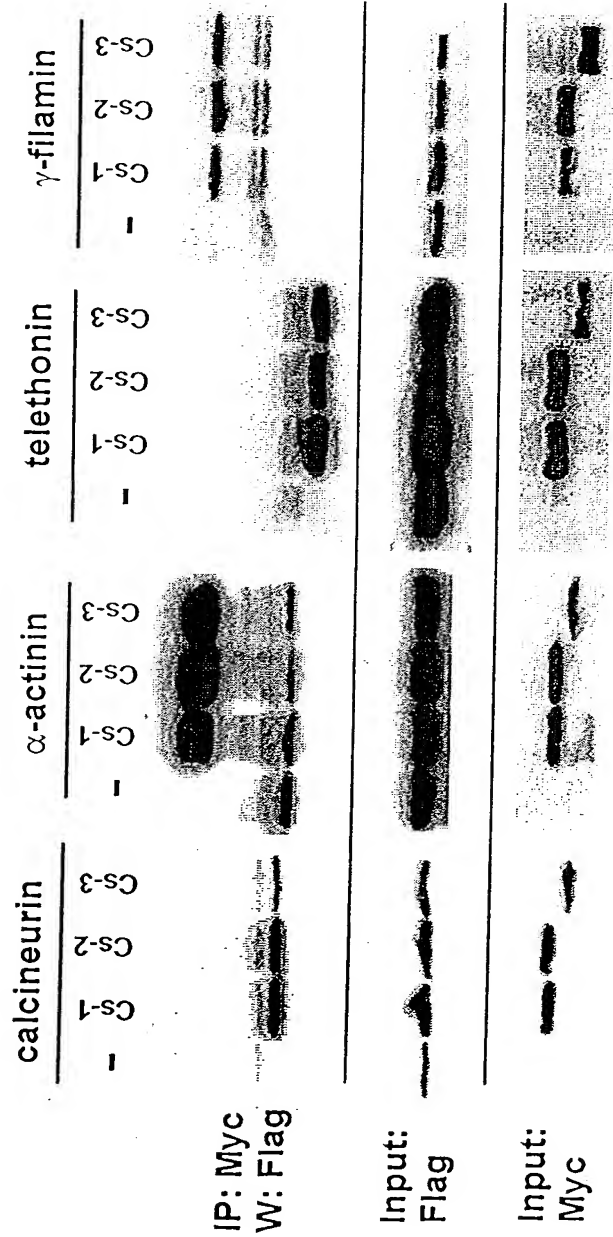


FIG. 10

calsarcin-3

actinin

merge

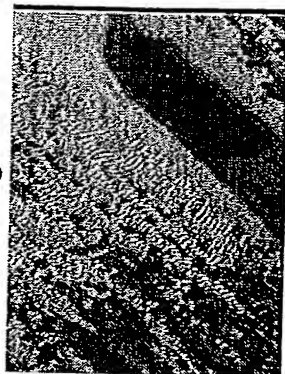
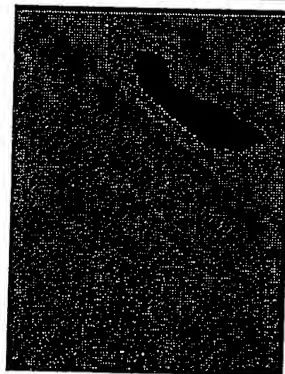
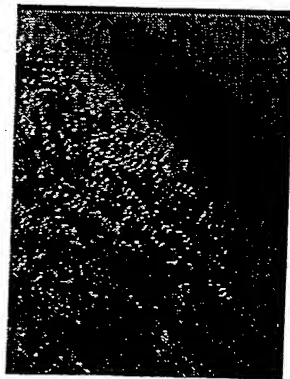
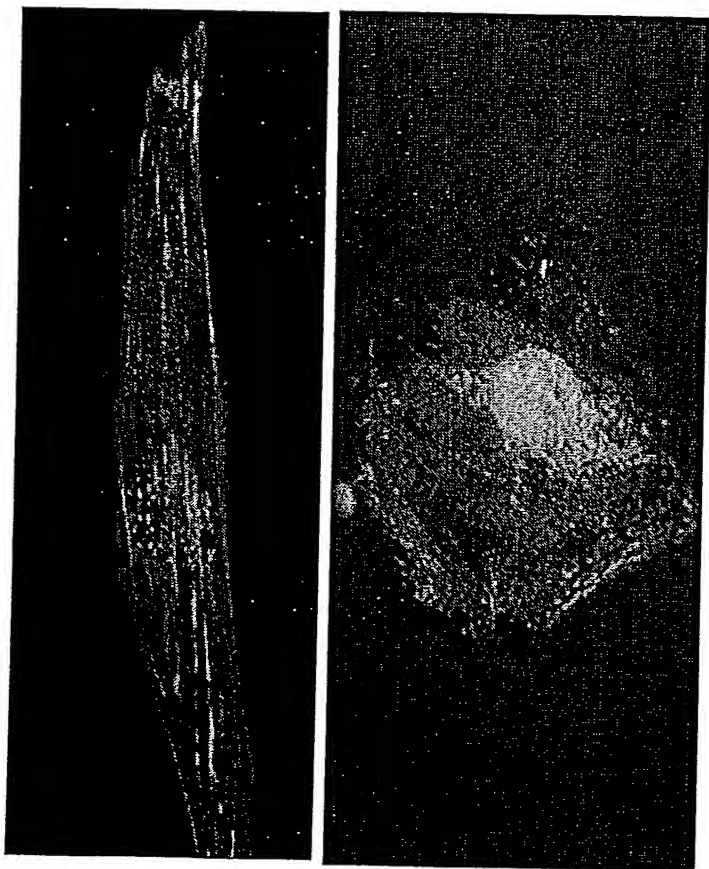


FIG. 11

FIG. 12



ClustalW Formatted Alignments

calaisarcin-3	1	M	P	L	S	T	P	A	P	K	Q	K	O	P	M	A	A	G	D	L	T	E	P	V	P	T	L	D	L	G	K	K	S	V	P	Q	D	M	E	E	L	S	L	R	N	R	47			
calaisarcin-2	1	M	P	L	S	T	P	A	P	K	Q	K	O	P	M	A	A	G	D	L	T	E	P	V	P	T	L	D	L	G	K	K	S	V	P	Q	D	M	E	E	L	S	L	R	N	R	55			
calaisarcin-1	1	M	L	S	H	N	T	N	K	K	Q	K	O	A	M	K	E	H	G	.	N	D	V	D	G	D	L	G	K	K	S	S	P	R	D	M	E	E	L	S	L	R	N	R	53					
calaisarcin-3	48	G	S	L	L	F	Q	K	R	O	R	R	V	K	F	T	E	F	L	A	S	Q	R	A	M	I	A	G	S	A	R	R	K	V	G	A	S	G	T	V	A	A	G	P	E	O	P	N	Y	102
calaisarcin-2	56	G	S	L	L	F	Q	K	R	O	R	R	V	K	F	T	E	F	L	A	S	Q	R	A	M	I	A	G	S	A	R	R	K	V	G	A	S	G	T	V	A	A	G	P	E	O	P	N	Y	102
calaisarcin-1	54	G	S	L	L	F	Q	K	R	O	R	R	V	K	F	T	E	F	L	A	S	Q	R	A	M	I	A	G	S	A	R	R	K	V	G	A	S	G	T	V	A	A	G	P	E	O	P	N	Y	108
calaisarcin-3	103	S	E	L	I	F	P	A	S	P	G	A	S	L	O	G	P	E	G	H	P	A	A	P	A	G	C	V	P	S	A	L	A	P	A	G	V	E	P	L	K	O	P	P	.	.	.	152		
calaisarcin-2	109	S	N	O	G	G	S	Q	A	O	G	S	G	Q	Y	G	D	Q	H	L	G	.	.	.	S	G	S	G	A	G	G	T	G	P	A	O	A	G	K	O	A	G	Q	A	G	.	.	156		
calaisarcin-1	95	S	N	L	E	G	G	S	Q	.	A	P	L	P	P	N	T	P	D	P	P	.	.	.	P	D	N	A	P	G	V	G	P	L	K	K	P	P	138					
calaisarcin-3	153	177			
calaisarcin-2	159	T	T	O	V	E	T	S	O	D	A	G	O	E	K	H	I	V	E	K	T	I	S	P	W	E	R	A	G	V	D	P	Q	K	M	E	L	G	I	D	L	L	A	Y	O	A	K	A	213	
calaisarcin-1	137	183	
calaisarcin-3	184	H	T	P	S	P	N	D	Y	R	N	F	N	T	P	F	F	G	G	P	L	V	G	G	231	
calaisarcin-2	214	E	L	P	265
calaisarcin-1	178	E	L	P	229
calaisarcin-3	232	P	S	F	N	R	V	A	G	W	R	N	L	P	251
calaisarcin-2	266	P	S	F	N	R	T	P	I	P	W	S	S	E	P	D	Y	N	V	I	G	I	P	L	D	O	299
calaisarcin-1	230	R	S	F	N	R	T	P	I	P	W	S	S	E	P	D	Y	N	V	I	G	I	P	L	D	O	264

FIG. 13